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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,182	09/09/2003	Jay C. Brinkmeyer	200303934-3	3338

7590 05/02/2007  
HEWLETT-PACKARD COMPANY  
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EXAMINER
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MYINT, DENNIS Y

ART UNIT	PAPER NUMBER
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2162

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/658,182	Applicant(s) BRINKMEYER, JAY C.	
	Examiner Dennis Myint	Art Unit 2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18 and 26-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18 and 26-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 23, 2007 has been entered.
2. The amendment filed on March 23, 2007 has been received and entered. Claims 18 and 26-47 are pending in this application. Claims 18, 26, and 37 are independent claims. In the amendment filed on March 23, 2007, claims 18, 26, and 37 were amended.
3. In light of the amendments made to claims 18, 26, and 37, rejection of said claims under 35 U.S.C. 112 Second Paragraph is hereby withdrawn.

### ***Response to Arguments***

4. Applicant's arguments regarding the rejection of claims 18 and 26-47 under 35 U.S.C. 101, filed on March 23, 2007, have been fully considered but are not persuasive. Applicant's arguments regarding the rejection of claims 18 and 26-47 under 35 U.S.C.

103 (a) have been fully considered but are moot in view of new ground(s) of rejection.

Referring to rejection of claims 18 and 26-47 under 35 U.S.C. 101, Applicant argued that *Applicant respectfully asserts that the independent claims 18, 26, and 37 taken as a whole, each recites statutory subject matter under 35 U.S.C. § 101 because produce a useful, concrete and tangible results* (Applicant's argument, Page 10 Lines 1-4).

In response, it is pointed out that said claims fail to produce ***tangible results***. Prior office action states that "*However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result*", citing MPEP 2106 (IV)(C)(2)((B))((2))(a) and (b).

As per claim 18, the claim is directed to "method for managing a queue having a plurality of queue headers within a computer system". The claim recites "attaching a plurality of data structures to the plurality of queue headers" and "controlling operations of the plurality of queue headers utilizing a function library". Said limitations/steps do not produce any tangible results. As such, claim 1 is not statutory.

As per claim 26, the claim is directed to "computer system that employs a queue system". Said computer system, according to Paragraph 0014 of the specification of the instant application is a software system per se. The claim recites said computer system as comprising "a plurality of generic queue headers being connected by a plurality of links" and "a data structure attached to at least one of the plurality of queue header without reference to the plurality of links, wherein in the plurality of queue headers are

controlled by a function library". However, said limitations/steps do not produce any tangible results. As such, claim 26 is not statutory.

As per claim 37, the claim is directed to " method for operating a queue system". The claim recites "linking a plurality of generic queue headers with a plurality of links" and "attaching a data structure to at least one of the plurality of generic queue headers without reference to the plurality of links, wherein the plurality of queue headers are controlled by a function library". Said limitations/steps do not produce any tangible results. As such, claim 37 is not statutory.

Therefore, Applicant's arguments regarding rejection of claims 18 and 26-47 under 35 U.S.C. 101 are invalid.

Applicant's arguments regarding the rejection of claims 18 and 26-47 under 35 U.S.C. 103 (a) have been fully considered but are moot in view of new ground(s) of rejection.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 18, 26, and 37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 18 fails to produce tangible results and therefore is not statutory. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for “managing a queue having a plurality of queue headers within a computer system”. The claim recites “attaching a plurality of data structures to the plurality of queue headers” and “controlling operations of the plurality of queue headers utilizing a function library”. However said steps/functions do not produce tangible results. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claims 26-36 are directed to a computer system. According to the specification, said *computer system* is software per se. Paragraph 0014 of the specification recites “A *computer system using a queuing system and method for managing a queue having plurality of generic queue headers connected together by a*

*plurality of links in a predetermined manner*". As such, said computer system is software per se and does not fall within the four statutory categories.

Additionally, claims 26-36 fail to produce tangible results and therefore are not statutory. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for "a computer system that employs a queue system". Claim 26 recites said computer system as comprising "a plurality of generic queue headers being connected by a plurality of links" and "a data structure attached to at least one of the plurality of queue header without reference to the plurality of links, wherein in the plurality of queue headers are controlled by a function library". However, said limitations/steps do not produce any tangible results". However said steps/functions do not produce tangible results. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claims 37-47 fail to produce tangible results and therefore are not statutory. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real

world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for "operating a queue system". Claim 37 recites "linking a plurality of generic queue headers with a plurality of links" and "attaching a data structure to at least one of the plurality of generic queue headers without reference to the plurality of links, wherein the plurality of queue headers are controlled by a function library". Said limitations/steps do not produce any tangible results. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 18, 26-28, 30-32, 37-39, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornaby (U.S. Patent Number 5410722) in view of Kirchner et al., (hereinafter "Kirchner") (U.S. Patent Number 5706437).

As per claim 18, Cornaby teaches the limitations:

"A method for managing a queue having a plurality of queue headers within a computer system comprising the steps of:" (Cornaby, Figure 2 to Figure 3L)



"attaching a plurality of data structures to the plurality of queue headers, where each data structure is attached to one of the plurality of queue headers" (Cornaby, Figure 2-3L which shows a plurality of queue headers wherein each queue header includes a data structure; Column 3 Line 64 through Column 4 Line 1, i.e., FIG. 2 is a configuration consisting of four queues, 20, 21, 22, and 23, within the queue system for the purpose of explaining the preferred embodiment of the queue system. The configuration is comprised of queue D23 which acts as the empty queue and which initially will contain all the task registers in the queue system; Note that task registers are data structures attached to queue headers; and Column 4 Lines 60-64, i.e., In view of, for simplicity in describing the invention, the task register in queues A 20, B21, and D23 are addressed ordered within the queue and the task registers in queue C23 are ordered in the sequence of insertion into the queue); and

"controlling operations of the plurality of queue headers utilizing one of a plurality of queue function calls" (Cornaby, Figure 2-3L; and Column 4 Lines 2-5, i.e., When the processor 10 receives a task to be performed by using the queue system, the task is assigned to the task register having the lowest address in queue D23);

"utilizing a plurality of queue function calls, wherein the function calls are configured to manage the plurality of queue operating on the data structures" (Cornaby, Figure 2-3L; and Column 4 Lines 2-5, i.e., When the processor 10 receives a task to be performed by using the queue system, the task is assigned to the task register having the lowest address in queue D23 ).

Cornaby does not explicitly teach the limitation: "a function library containing a plurality of function calls".

On the other hand, Kirchner teaches the limitation:

"a function library containing a plurality of function calls" (Kirchner, Column 8 Lines 10-36, i.e., *The client application processes 902 and 904 use the client APIs 912 and 913, which include **a library of generic functions** as will be discussed below, to connect to and communicate with the desired service module at a server 914. API functions 912 and 913 are called to make application requests for a service to the CLPROC 906 and 908. Specifically, the function calls in the client APIs 912 and 913 will encode a NIDS message and write the NIDS message and its associated data to the CLPROC 906 and 908 via a combined shared memory and UNIX message **queue mechanism** 922. In the CLPROC 906 and 908, **an NSPP header** is added to the NIDS message. The path of the queue mechanism 922 between the client applications 902 and 904 and the CLPROC 906 and 908 is shown by arrows 920 and 921, respectively. Because of the system resources within the application process 902 (ARU style model), the arrow 920 showing the path of the request message is shown to originate in the application process 902. For application process 904, the unique identification is generated within the client API 913. Thus, the arrow 921 showing the path of the request message is shown to originate at the client API 913).*

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the method of Cornaby, which teaches queue headers which are utilized to make function calls and to which data structures are

attached, with the method of Kirchner, which teaches a function library, so that, in the combined method, a function library containing a plurality of queue function calls is used to manage/control the data structures which are attached to queue headers. One would have been motivated to do so in order integrate function calls of similar operations in one container, which is well known in the art of operating systems.

As per claim 26, Cornaby in view of Krichner discloses the limitations:

"A computer system that employs a queuing system, the queuing system" (Figure 2-3L) comprising:

"a plurality of generic queue headers, the plurality of generic queue headers being connected by a plurality of links" (Cornaby, Figure 2, *which shows a plurality of queues*, Abstract, and Column 1 Lines 54-64); and

"a data structure attached to at least one of the plurality of generic queue headers without reference to the plurality of links" (Cornaby, Figure 3A-3L), "wherein the plurality of queue headers are controlled" (Cornaby, Figure 2-3L; and Column 4 Lines 2-5, i.e., *When the processor 10 receives a task to be performed by using the queue system, the task is assigned to the task register having the lowest address in queue D23*) "by a function library" (Kirchner, Column 8 Lines 10-36) "containing a plurality of function calls configured to manage the plurality of queue headers on the data structures" (Cornaby, Figure 2-3L; and Column 4 Lines 2-5, i.e., *When the processor 10 receives a task to be performed by using the queue system, the task is assigned to the task register having the lowest address in queue D23*).

As per claim 27, Cornaby is directed to the limitation:

"comprising a plurality of queue function calls for controlling operations of the plurality of generic queue headers" (Cornaby Abstract, i.e. "task registers").

As per claim 28, Cornaby is directed to the limitation:

"wherein the plurality of function calls includes an insert call, a search and remove call, a search and insert call, a search only call and a peek call" (Column 8 Line 5 through Column 10 Line 8 and Figure 3A-6).

As per claim 30, Cornaby is directed to the limitation:

"wherein each generic queue header includes a pointer to a next generic queue header, a pointer to a previous generic queue header, and a pointer to the attached data structure" (Column 2 Lines 14-18).

As per claim 31 Cornaby is directed to the limitation:

"wherein each generic queue header includes a dynamic queue header"  
(Cornaby, Abstract, i.e. *Control means is provided for dynamically assigning task registers to queues by controlling the addresses stored in the previous and next fields in each header and task registers such that each of said task registers is always assigned to a queue in the queue system*).

As per claim 32, Cornaby is directed to the limitation:

"wherein each generic queue header comprises a static queue header" (Figure 2, *which shows a plurality of static queue headers*).

Claim 37 is rejected on the same basis as claim 26.

Claim 38 and 39 are rejected on the same basis as claim 27 and 28 respectively.

Claim 41, 42, and 43 are rejected on the same basis as claim 30, 31, and 32 respectively.

9. Claim 29 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornaby in view of Kirchner, and further in view of Douceur et al. (hereinafter "Douceur") (U.S Patent Number 6041053).

Referring to claim 29, Cornaby in view of Kirchner as applied to claim 27 above does not explicitly disclose the limitation: "a search key and a search command."

Douceur teaches the limitation: "a search key and a search command" (Douceur Abstract). Douceur is directed to a system and method classifying packets wherein each data structure includes a search key field, and one of the generic queue function calls utilizes a search command to scan each data structure attached to one of the generic queue headers until the search command matches the search key field and the operation of the one of the queue function calls is performed (Abstract of Douceur)

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of using a search key field as taught by

Douceur to the system of Cornaby in view of Krichner as applied to claim 27 above so that, in the resultant system, each data structure would include a search key field, and one of the generic queue function calls utilizes a search command to scan each data structure attached to one of the generic queue headers until the search command matches the search key field and the operation of the one of the queue function calls is performed. One would have been motivated to do so in order to provide "a search technique capable of rapidly retrieving stored information from a data structure" (Douceur et al., Column 3 Line 54-58).

Claim 40 is rejected on the same basis as claim 29.

10. Claim 35 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornaby in view of Krichner and further in view of Peterson et al. (hereinafter "Peterson") (U.S Patent Application Publication Number 2006/0010420).

Referring to claim 35 Cornaby in view of Kirchner does not explicitly teach the limitation: "wherein the queuing system comprises a portion of an operation system".

Peterson teaches the limitation:

"wherein the queuing system comprises a portion of an operation system"  
(Paragraph 0092, i.e., *poll the operating system even queue*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of using queues as part of an operating

system, as taught by Peterson, to the method of Cornaby in view of Kirchner so that, in the resultant method would, the queuing system would comprise a portion of an operating system. One would have been motivated to do so because it is notoriously well known in the art that queuing systems are part of modern operating system.

Claim 46 is rejected on the same basis as claim 35.

11. Claim 36 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornaby in view of Kirchner and further in view of Fischer et al. (hereinafter "Fischer") (U.S Patent Application Publication Number 2002/0163932).

Referring to claim 36 Cornaby in view of Kirchner does not explicitly teach the limitation: "wherein the queuing system comprises a portion of a driver".

Fischer teaches the limitation: "wherein the queuing system comprises a portion of a driver" (Paragraph 0500, i.e., *queues that lie within the device driver*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of using a queuing system as portion of driver as taught by Fischer to the method Cornaby in view of Kirchner so that, in the resultant method, the queuing system would comprise a portion of a driver. One would have been motivated to do so because it is well known in the art that device drivers comprise internal queuing systems.

Claim 47 is rejected on the same basis as claim 36.

12. Claim 33, 34, 44, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornaby in view of Kirchner, and further in view of Johnson et al. (hereinafter "Johnson") (U.S. Patent Number 5133053).

Referring to claim 33 Cornaby in view of Kirchner does not explicitly teach the limitation: "each of the plurality of links is uni-directional."

Johnson teaches the limitation: "each of the plurality of links is uni-directional" (Column 10 Lines 61-64). Johnson teaches a system and method for interprocess communication queue location transparency, wherein bi-directional queues are employed to be more efficient for request and reply (Column 10 Line 61-64). Note that bi-directional queues implemented in said manner could also function as unidirectional queues. Unidirectional feature is already inherent in a bidirectional queuing system.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the feature of unidirectional/bidirectional queues as taught by Johnson et al. with the system taught Cornaby in view of Kirchner so that, in the combined system, each of the plurality of links is uni-directional. One would have been motivated to do so in order to "be more efficient for request and reply" (Johnson et al, Column 10 Line 61-64).

Claim 34 is rejected on the same basis as claim 33.

Claim 44 and 45 are rejected on the same basis as claim 33 and 34 respectively.




### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Myint  
Examiner  
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